

**OPERATION, MAINTENANCE, AND
REHABILITATION PLAN**

**LOST LAKE HYDROLOGIC RESTORATION AND
MARSH CREATION
TE-0072**

SEPTEMBER 2023

Prepared by:
Coastal Protection and Restoration Authority of Louisiana

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The Coastal Protection and Restoration Authority (CPRA) of Louisiana and the United States Department of the Interior / Fish and Wildlife Service (USFWS) agree to carry out the terms of this Operation, Maintenance, Repair, and Rehabilitation Plan (hereinafter referred to as the “Plan”) of the accepted, completed project features in accordance with the Cost Sharing Agreement No. 2511-10-06, (Attachment I).

The project features covered by this plan are inclusive of and are identified as the Lost Lake Marsh Creation and Hydrologic Restoration Project (TE-72). The intention of the provisions of this Plan is to maintain this project in a condition that will generally provide the anticipated benefits that the project was based on. There are no requirements that this project function to any standard beyond the economic life, except that it is not left as a hazard to navigation or a detriment to the environment.

Construction of the Lost Lake Marsh Creation and Hydrologic Restoration Project (TE-72) is authorized by Section 303(a) of Title III Public Law 101-646, the Coastal Wetlands Planning, Protection, and Restoration Act (CWPPRA) enacted on November 29, 1990 as amended. The Lost Lake Marsh Creation and Hydrologic Restoration Project (TE-72) was approved on the 19th Priority Project List.

1. PROJECT DESCRIPTION, PURPOSE, AND LOCATION

The Lost Lake Marsh Creation and Hydrologic Restoration Project (TE-72) is located in Terrebonne Parish, Louisiana near the vicinity of Lost Lake. The project encompasses approximately 1,177 acres including 250 acres of intermediate marsh and 927 acres of open water.

Significant marsh loss has occurred between Lake Pagie and Bayou DeCade to the point that little structural framework remains separating those two water bodies. Northeast of Lost Lake, interior marsh breakup has resulted in large, interior ponds where wind/wave energy continues to result in marsh loss. West of Lost Lake, interior breakup has occurred as a result of ponding and the periodic entrapment of higher salinity waters during storm events. The TE-72 project will restore an important feature of structural framework between Lake Pagie and Bayou Decade to prevent the coalescence of those two water bodies. It will increase the delivery of fresh water, sediments, and nutrients into marshes north and west of Lost Lake, and reduce fetch in open water areas via construction of a terrace field. Marshes north, east, and west of Lost Lake serve an important function as an intermediate zone buffering fresh marshes to the north from the higher salinities to the south.

The Lost Lake Marsh Creation and Hydrologic Restoration Project (TE-72) involves creation and nourishment of 276 acres of marsh between Lake Pagie and Bayou DeCade, 162 acres of marsh north of Bayou DeCade in three marsh creation cells, and 27 acres of marsh along the northwest Lost Lake shoreline near the mouth of Crochet Canal. Also included is approximately 30,000 linear feet of terracing north of the three marsh creation cells and the construction of 5 water control structures.

The project has a twenty (20) year project life, which began in January 2018. The principal project features include:

Fill Area 1 (marsh between Lake Pagie and Bayou DeCade)

- Marsh Creation (280 acres)
- Earthen Containment Dike (27,962 Linear Feet)

Fill Area 2A (marsh North of Bayou DeCade)

- Marsh Creation (50 acres)
- Earthen Containment Dike (7,439 Linear Feet)

Fill Area 2B (marsh North of Bayou DeCade)

- Marsh Creation (71 acres)
- Earthen Containment Dike (9,278 Linear Feet)

Fill Area 2C (marsh North of Bayou DeCade)

- Marsh Creation (41 acres)
- Earthen Containment Dike (5,983 Linear Feet)

Fill Area 3 (marsh along the northwest Lost Lake shoreline)

- Marsh Creation (13 acres)
- Earthen Containment Dike (3,928 Linear Feet)

Earthen Terraces (North of fill areas 2A, 2B, 2C)

- Earthen Terraces (30,000 Linear Feet)

Hydrologic Restoration

- WC-1 – Variable Crest Weir (126 Linear Feet w/10 bays) located in Bayou Carencro
- WC-4 – Variable Crest Weir (77 Linear Feet w/4 bays) located in Bayou Carencro
- WC-5 – Variable Crest Weir (112 Linear Feet w/10 bays) located in a small bayou on the west bank of Lost Lake
- WC-6 – Variable Crest Weir (147 Linear Feet w/14 bays) located in Rice Bayou
- Site 1 – Variable Crest Weir (91 Linear Feet w/7 bays) located in Little Bayou Carencro

2. CONSTRUCTION COMPLETION

The Lost Lake Marsh Creation and Hydrologic Restoration Project (TE-72) completion report is included in Attachment III of this Plan. Within this completion report is a summary of information and significant events including: project personnel, final as-built project features and benefitted acres, construction cost and CWPPRA project estimates, construction oversight cost, construction activities and change orders, pipeline and utility crossing owner information, and other significant milestone dates and comments.

The project “As-Built” construction drawings updated with all field changes and modifications that occurred during construction are included in Attachment IV.

3. PROJECT PERMITS

Project permit applications were completed and submitted to appropriate agencies, and permits were received prior to construction. These permits and permit amendments are included in Attachment V. Provisions for the renewal of Federal and State permits may be required.

4. ITEMS REQUIRING OPERATION, MAINTENANCE, AND REHABILITATION

The following completed, structural components jointly accepted by CPRA and USFWS will require operation, maintenance, repair, and/or rehabilitation throughout the twenty (20) year life of the project.

Structure WC-1: 126 linear ft. steel pile variable crest weir. This structure replaced a fixed crest weir located on the south bank of Carencro Bayou east of Crochet Canal. The structure consists of 10, 5ft. wide variable crest sections each containing a stop log bay with 6 each, 3" x 6" stop logs mounted in a steel structured stop log guide, locking channel secured by locks, which can be adjusted from +0.5 ft. NAVD88 to -2.5 ft. NAVD88. To access, install, and remove stop logs is a 6" x 8" timber hoist support including galvanized walkways, grating, handrails, pile caps, pull-up bars, and miscellaneous channels, and angle bracings, nuts and bolts which are galvanized or have painted surfaces. Aluminum warning signs are attached to round timber piles with galvanized pile caps, set at the variable crest section, stop log bay.

Structure WC-4: 77 linear ft. steel pile variable crest weir. This structure replaced a fixed crest weir located on the south bank of Carencro Bayou east of Crochet Canal. The structure consists of 4, 5ft. wide variable crest sections each containing a stop log bay with 6 each, 3" x 6" stop logs mounted in a steel structured stop log guide, locking channel secured by locks, which can be adjusted from +0.5 ft. NAVD88 to -2.5 ft. NAVD88. To access, install, and remove stop logs is a 6" x 8" timber hoist support including galvanized walkways, grating, handrails, pile caps, pull-up bars, and miscellaneous channels, and angle bracings, nuts and bolts which are galvanized or have painted surfaces. Aluminum warning signs are attached to round timber piles with galvanized pile caps, set at the variable crest section, stop log bay.

Structure WC-5: 112 linear ft. steel pile variable crest weir. This structure replaced a fixed crest weir located in a small channel on the west bank of Lost Lake. The structure consists of 10, 5ft. wide variable crest sections each containing a stop log bay with 6 each, 3" x 6" stop logs mounted in a steel structured stop log guide, locking channel secured by locks, which can be adjusted from +0.5 ft. NAVD88 to -2.5 ft. NAVD88. To access, install, and remove stop logs is a 6" x 8" timber hoist support including galvanized walkways, grating, handrails, pile caps, pull-up bars, and miscellaneous channels, and angle

bracings, nuts and bolts which are galvanized or have painted surfaces. Aluminum warning signs are attached to round timber piles with galvanized pile caps, set at the variable crest section, stop log bay.

Structure WC-6: 147 linear ft. steel pile variable crest weir. This structure replaced a fixed crest weir located on the west bank of Rice Bayou south of Lost Lake. The structure consists of 14, 5ft. wide variable crest sections each containing a stop log bay with 6 each, 3" x 6" stop logs mounted in a steel structured stop log guide, locking channel secured by locks, which can be adjusted from +0.5 ft. NAVD88 to -2.5 ft. NAVD88. To access, install, and remove stop logs is a 6" x 8" timber hoist support including galvanized walkways, grating, handrails, pile caps, pull-up bars, and miscellaneous channels, and angle bracings, nuts and bolts which are galvanized or have painted surfaces. Aluminum warning signs are attached to round timber piles with galvanized pile caps, set at the variable crest section, stop log bay.

Site 1: 91 linear ft. steel pile variable crest weir. This structure replaced an earthen plug on the south bank of Little Bayou Carencro east of Carencro Lake. The structure consists of 7, 5ft. wide variable crest sections each containing a stop log bay with 6 each, 3" x 6" stop logs mounted in a steel structured stop log guide, locking channel secured by locks, which can be adjusted from +0.5 ft. NAVD88 to -2.5 ft. NAVD88. To access, install, and remove stop logs is a 6" x 8" timber hoist support including galvanized walkways, grating, handrails, pile caps, pull-up bars, and miscellaneous channels, and angle bracings, nuts and bolts which are galvanized or have painted surfaces. Aluminum warning signs are attached to round timber piles with galvanized pile caps, set at the variable crest section, stop log bay.

5. OPERATION AND MAINTENANCE BUDGET

The cost associated with the Operations, Maintenance, and Rehabilitation of the features outlined in Section 4 of this plan for the twenty (20) year project life is included and summarized in Attachment VI.

6. OPERATION OF STRUCTURES

The schedule for operations of structures WC-1, WC-4, WC-5, WC-6 and Site 1 has been jointly determined by USFWS, CPRA, and Conoco Phillips (formerly Burlington Resources) and based on analysis of monitoring data provided by CPRA. Operation schedules may require modification in the future should hydrologic conditions within the project area change. In accordance with the Cost Share Agreement, LDNR shall assume responsibility for operation of these structures. Based on present data, the operation schedule for the project shall be as described in Attachment VII - Structure Operation Schedule.

7. RESPONSIBILITIES – MAINTENANCE AND REHABILITATION

A. CPRA will:

1. In accordance with the Cost Sharing Agreement No. _____ outlined in Attachment I, assume all responsibilities for maintenance and rehabilitation of the accepted, completed project features identified in Section 4.
2. Conduct joint site inspections with USFWS of the project site at least annually and after major storm events if determined to be necessary by CPRA and USFWS. CPRA will submit to USFWS, a report detailing the condition of the project features and recommendations for any corrective action. If CPRA recommends that corrective actions are needed, the report will include the entire estimated cost for engineering and design, supervision and inspection, construction, contingencies, and the urgency of such action. Annual inspection reports may be compiled under attachment VIII - Annual Inspections.
3. Perform or have performed any corrective actions needed, if such corrective actions have been approved by CPRA, USFWS, and the CWPPRA Task Force. USFWS will participate with CPRA, or its appointed representative, in the engineering and design phases of the corrective actions for the project. Oversight of engineering and construction of the corrective actions for the project will be the responsibility of CPRA or its appointed representative. At least thirty (30) calendar days prior to the date of formal request for construction bids, CPRA or its appointed representative shall provide USFWS with final copies of all project corrective action designs and specifications for review and concurrence by USFWS. CPRA or its appointed representative shall approve the final designs and specifications prior to proceeding with bid solicitations on all project corrective action construction contracts in coordination with USFWS. Any plan and/or specification changes both before and after award of construction contracts shall be approved by CPRA in coordination with USFWS.
4. USFWS and CPRA representatives shall meet as necessary during the period of construction for corrective actions and shall make such recommendations as they deem necessary.
5. Provide the non-Federal contribution towards operation and maintenance activities as specified in the Cost Sharing Agreement between CPRA and USFWS.

B. USFWS will:

1. Conduct joint site inspections with CPRA of the project site at least annually and after major storm events if determined to be necessary by CPRA and USFWS.

2. Request funding and authorization from the CWPPRA Task Force for any corrective actions that are deemed necessary by CPRA and USFWS.
3. Provide guidance for the development of plans and implementation of the project, review final copies of any maintenance and rehabilitation project designs and specifications, and provide review and approval of all planning and construction details prior to formal request for construction bids or any corrective actions for the project.
4. Provide the Federal contribution towards operations and maintenance activities as specified in the Cost Sharing Agreement between CPRA and USFWS.

FINAL

The undersigned parties, acting on behalf of their respective agencies, agree to operate, maintain, and rehabilitate the Lost Lake Marsh Creation and Hydrologic Restoration Project (TE-0072) according to this document, referenced Cost Share Agreement, plans, and all applicable permits and laws.

UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE

KEVIN
ROY
By: _____ Date: _____
Digitally signed by
KEVIN ROY
Date: 2023.03.21
10:11:42 -05'00'

Title: CWPPRA Program Coordinator

COASTAL PROTECTION AND RESTORATION AUTHORITY OF LOUISIANA

By: *Daniel Dem...* Date: 3/22/2023
Title: REGIONAL OPERATIONS MANAGER



Attachment I
Cost Sharing Agreement

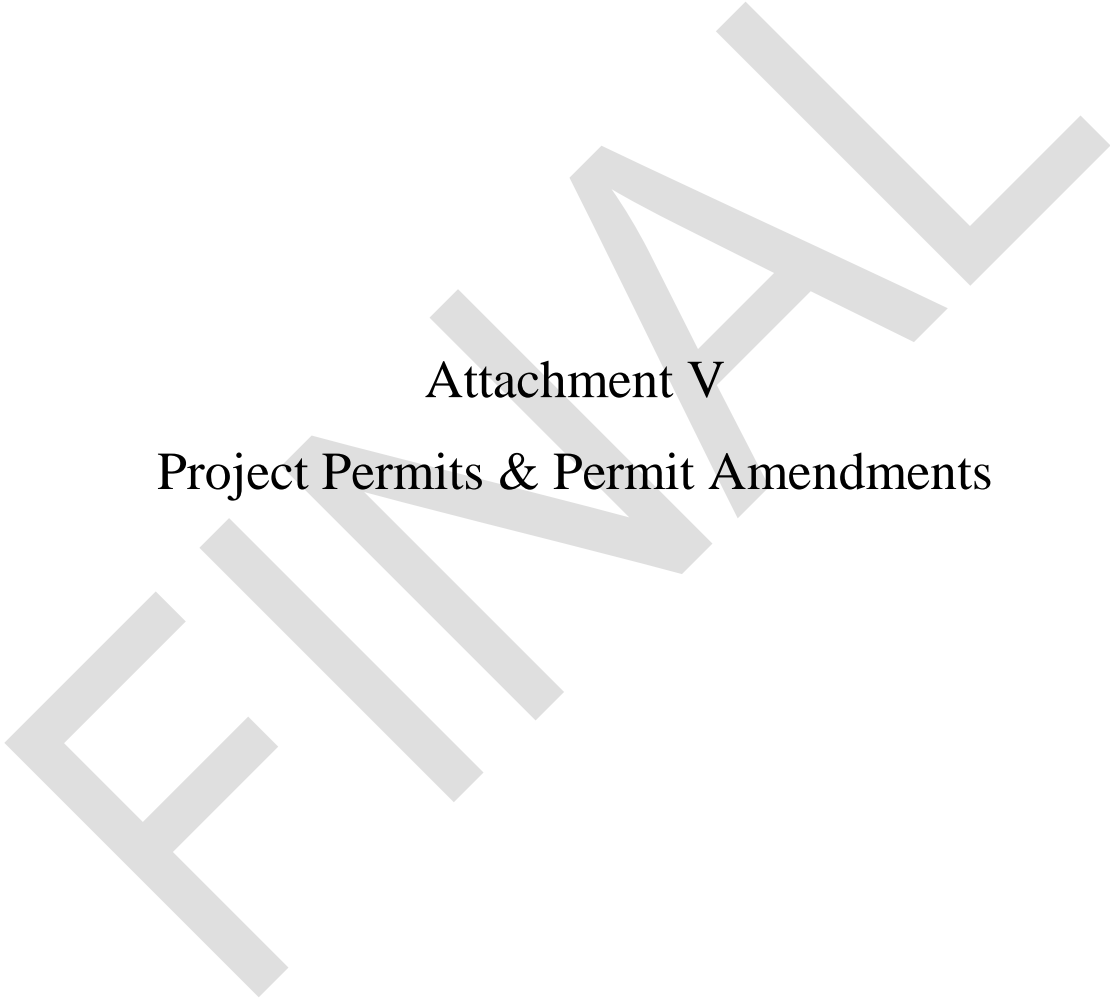


Attachment II
Project Features

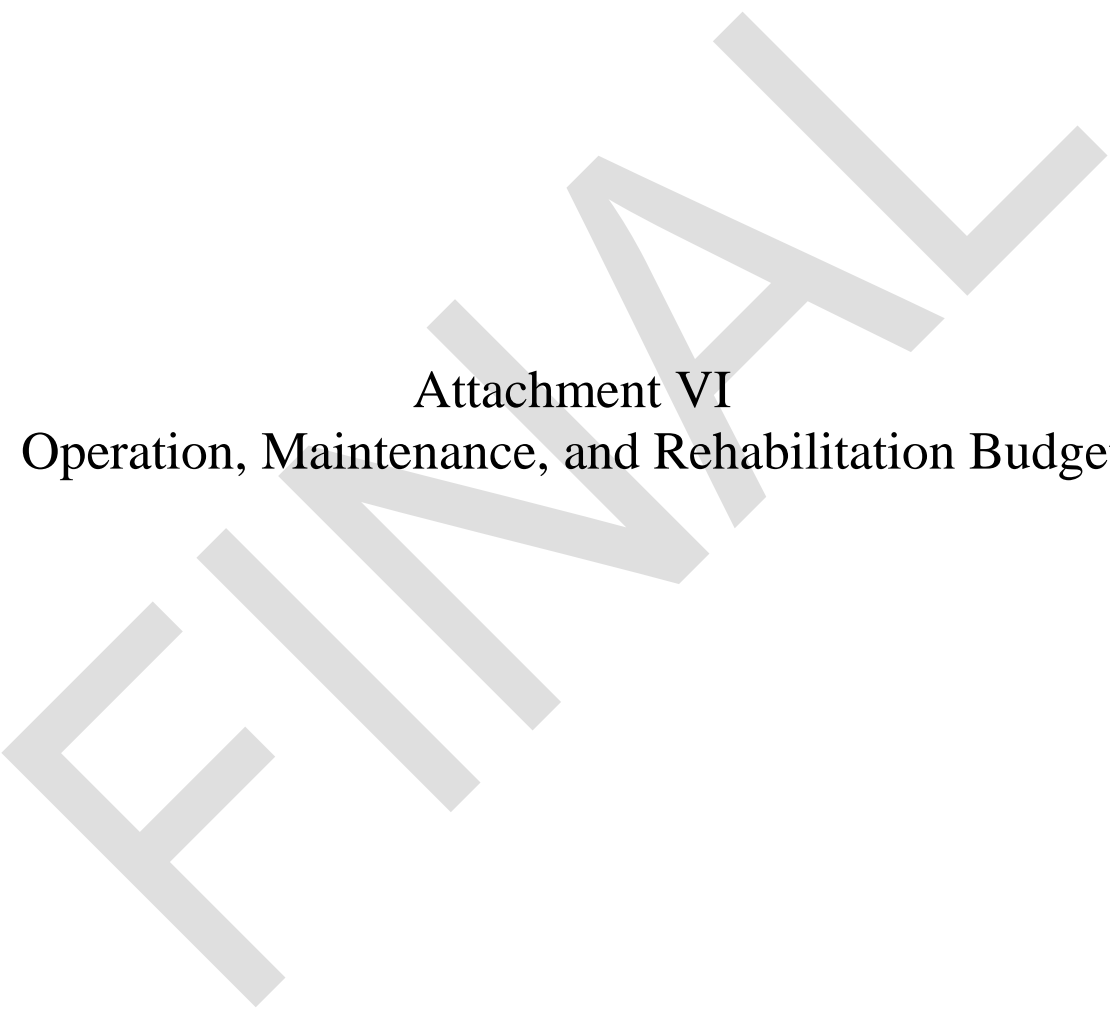


Attachment III
Project Completion Report

Attachment IV
As-built Drawings (Final Plan)



Attachment V
Project Permits & Permit Amendments



Attachment VI
Operation, Maintenance, and Rehabilitation Budget